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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/174,002

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EXAMINER

NGUYEN, PHUONGCHAU BA

ART UNIT

PAPER NUMBER

2665

38

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/174,002

Applicant(s)

BOCH ET AL.

Examiner

Phucngchau Ba Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Claim Objections

1. Claims 26 and 34 are objected to because of the following informalities:

Claim 26, Line 7, ---wherein the interface system further--- should be inserted before “comprising” to make the claimed language more clear.

Claim 26, Line 12, “the point to point inter-cell radio link” should be changed to ---a point to point inter-cell radio link with the base station in the neighboring cell--- to make the claimed language more clear, because as of now, the new second interface is at the base station (not at the NIU) for providing the point to point inter-cell radio link to another base station in neighboring cell.

Claim 34, line 11, “interference” should be changed to ---interface---

Appropriate correction is required.

Claim Rejections – 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 26–28, 42, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Persinotti (4,578,815) in view of Krishnamurthi (6,198,929), and further in view of Frank (5,914,948).

Regarding claims 26, 42:

Persinotti (4,578,815) discloses an interface system (36 & 20) at a base station (36 & 20) in a cell (site A) within a cellular wireless network (10, fig.1) for providing bidirectional wireless communications to Network Interface Units (NIUS) at customer sites (mobile unit 62) within the cell (site A), and further comprising an multi-services switch (52) equipped with one or more radio interface cards (20) for providing wireless communications between the base station and the NIUs and one or more second radio interface cards (36) for providing the point to point inter-cell radio link (with the neighboring base station 38 at site B---emphasis added).

Persinotti does not explicitly disclose that each of said NIUs having a highly directional antenna for providing a point to point inter cell radio link for communicating with a base station in a neighboring cell. However, in the same field of endeavor, Krishnamurthi (6,198,929) discloses in the figure wherein each of said NIUs (SU1, 112) communicating a point to point inter cell radio link with other base station in neighboring cell. Therefore, it would have been obvious to an artisan to apply Krishnamurthi's teaching to Persinotti's system with the motivation being to provide a soft handoff between base stations when the mobile station moves from one cell to another.

Also, in the same field of endeavor, Frank (5,914,948) discloses NIUs having a highly directional antenna for providing a point to point inter cell radio link for communicating with a base station in a neighboring cell {col.3, lines 11-13, 31-32}. Therefore, it would have been obvious to an artisan to apply Frank's teaching to Persinotti's system with the motivation being to avoid an abrupt interruption of radio communication by providing a soft handoff when a mobile station moving from one base station BS to the next base station BS' {col.3, lines 56-63}.

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Regarding claim 27:

Persinotti further discloses wherein said cellular wireless network (10, fig.1) has a plurality of cells (sites A, B, C, D), each having a base station (20, 22, 24, 26) for providing wireless communications to NIUs within each cell {fig.1; col. 4, lines 55–59} and for providing a point to point inter-cell radio link with other base stations within the network (via 36, 48, 50, 38).

Regarding claim 28:

Persinotti further discloses wherein one of the base stations (20&36, fig.1) is controlled by a network manager (60, fig.1) to provide configuration parameters for each of said one or more first (20, fig.1) and said one or more second interface (36, fig.1) cards in each of the multi-services switch (52) in each base station.

Regarding claim 44:

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Persinotti further discloses wherein one of the base stations (20&36, fig.1) is controlled by a network manager (60, fig.1) to provide configuration parameters for each of said one or more first (20, fig.1) and said one or more second interface (36, fig.1) cards in each of the multi-services switch (52) in each base station, wherein said configuration parameters include; operating frequencies, modulation rates, forward error correction values, and transmission power levels {col.5, lines 18-31}.

4. Claims 29-30, 32, 40, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Persinotti (4,578,815) in view of Krishnamurthi (6,198,929), and further in view of Frank (5,914,948) as applied to claims 26-28, 34-35 above, and further in view of Jaisingh (6,009,096).

Regarding claim 29:

Persinotti does not explicitly disclose wherein the cellular wireless network is connected to an asynchronous transfers mode (ATM) network. However, in the same field of endeavor, Jaisingh (6,009,096) further discloses wherein the cellular wireless network (fig.1) is connected to an asynchronous

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transfers mode (ATM) network (203, fig.2). Therefore, it would have been obvious to an artisan to apply Jaisingh's teaching to Persinotti's system with the motivation being to provide both broadband and narrowband services to the fixed and mobile wireless subscribers.

Regarding claims 30, 43:

Persinotti does not explicitly disclose wherein each cell is sub-divided into sectors and each base station has a sectored antenna for communicating with NIUs located in each sector within the cell. However, in the same field of endeavor, Jaisingh (6,009,096) discloses wherein each cell is sub-divided into sectors (fig.1) and each base station (201) has a sectored antenna (210) for communicating with NIUs located in each sector within the cell {fig.2b}.

Therefore, it would have been obvious to an artisan to apply Jaisingh's teaching to Persinotti's system with the motivation being to provide a variety of services to all subscribers within a service area and transmit certain subscriber-specific services to a sector or subset of subscribers in a service area {col.2, lines 12-15}.

Regarding claims 32, 40:

Persinotti discloses each of said other base stations (36, fig.1) is in bidirectional communication with said one base station (38, fig.1) over inter-cell radio links.

Persinotti does not explicitly disclose wherein said inter-cell radio link between respective base stations is in a ring configuration, wherein one of the base stations is connected to a network and a network manager. However, in the same field of endeavor, Jaisingh further discloses wherein said inter-cell radio link between respective base stations is in a ring configuration {fig.2a}, wherein one of the base stations (201, fig.1) is connected to a network (203, fig.1) and a network manager (servers, fig.2a). Therefore, it would have been obvious to an artisan to apply Jaisingh's teaching to Persinotti's system with the motivation being to help isolate the broken ring/connection between nodes by re-creating a new connection, thus give the ring network great flexibility, reliability, and ease of configuration and maintenance.

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5. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Persinotti (4,578,815) in view of Krishnamurthi (6,198,929), and further in view of Frank (5,914,948) as applied to claim 26 above, and further in view of Kawano (4,727,590).

Persinotti does not explicitly disclose wherein each of said one or more first interface cards and each of said one or more second interface cards communicates with said sectorized antenna via one or more combiners.

However, in the same field of endeavor, Kawano (4,727,590) discloses wherein each of said one or more first interface cards (31a, fig.4) and each of said one or more second interface cards (37a, fig.4) communicates with said sectorized antenna (31a, 37a, fig.5) via one or more combiners (345, fig.5). Therefore, it would have been obvious to an artisan to apply Kawano's teaching to Persinotti's system with the motivation being to relay transmission to the base station even when the transmission output of the mobile unit is very low {col.3, line 63-col.4, line 2}.

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6. Claims 33, 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Persinotti (4,578,815) in view of Krishnamurthi (6,198,929), and further in view of Frank (5,914,948) as applied to claims 26–28, 34–35 above, and further in view of Acompora (6,049,593).

Regarding claims 33, 41:

Persinotti does not explicitly disclose wherein said inter-cell radio link between respective base stations is in a mesh configuration. However, in the same field of endeavor, Acompora (6,049,593) discloses a mesh network 100 in figure 2. Therefore, it would have been obvious to an artisan to apply Acompora's teaching to Persinotti's system and the motivation being to provide efficient alternative transmission link of high quality incase the primary path between two sites (base stations) were congested or in a state of failure.

7. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Persinotti (4,578,815) in view of Krishnamurthi (6,198,929), and further in view of Frank (5,914,948) as applied to claim 26 above, and further in view of Schaeffer (5,455,821).

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Persinotti discloses not explicitly disclose said radio interface cards being, selectively, one of the following: frequency division multiple access (FDMA) or time division multiple access (TDMA). However, in the same field of endeavor, Schaeffer further discloses said radio interface cards (20, 36; fig.1; Persinotti) being, selectively, one of the following: frequency division multiple access (FDMA) or time division multiple access (TDMA){Schaeffer, col.3, lines 23-27}. Therefore, it would have been obvious to an artisan to apply Schaeffer's teaching into Persinotti's base station and the motivation being to provide communicating between the mobile communication units and base stations in any number of format such as TDMA or FDMA.

8. Claims 35-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Persinotti (4,578,815) in view of Krishnamurthi (6,198,929), and further in view of Frank (5,914,948) as applied to claims 26-28, 34-35 above, and further in view of Schaeffer (5,455,821) and Jaisingh (6,009,096).

Regarding claim 35:

Persinotti does not explicitly disclose wherein said cell is sub-divided into multiple sectors and said multi-services switch is equipped with a first radio interface card for each sector. However, in the same field of endeavor, Jaisingh further discloses wherein said cell is sub-divided into multiple sectors (fig.1) and said multi-services switch (311, fig.2b) is equipped with a first radio interface card (210, fig.2b) for each sector. Therefore, it would have been obvious to an artisan to apply Jaisingh's teaching to Persinotti's system with the motivation being to provide a variety of services to all subscribers within a service area and transmit certain subscriber-specific services to a sector or subset of subscribers in a service area {col.2, lines 12-15}.

Regarding claim 36:

Persinotti does not explicitly disclose wherein the cellular wireless network is connected to an asynchronous transfers mode (ATM) network. However, in the same field of endeavor, Jaisingh (6,009,096) further discloses wherein the cellular wireless network (fig.1) is connected to an asynchronous transfers mode (ATM) network (203, fig.2). Therefore, it would have been

obvious to an artisan to apply Jaisingh's teaching to Persinotti's system with the motivation being to provide both broadband and narrowband services to the fixed and mobile wireless subscrib

Regarding claim 37:

Persinotti further discloses wherein one of the base stations (20&36, fig.1) is controlled by a network manager (60, fig.1) to provide configuration parameters for each of said one or more first (20, fig.1) and said one or more second interface (36, fig.1) cards in each of the multi-services switch (52) in each base station.

Regarding claim 38:

Persinotti further discloses wherein one of the base stations (20&36, fig.1) is controlled by a network manager (60, fig.1) to provide configuration parameters for each of said one or more first (20, fig.1) and said one or more second interface (36, fig.1) cards in each of the multi-services switch (52) in each base station, wherein said configuration parameters include; operating

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frequencies, modulation rates, forward error correction values, and transmission power levels {col.5, lines 18–31}.

Regarding claim 39:

Persinotti further discloses wherein said cellular wireless network (10, fig.1) has a plurality of cells (sites A, B, C, D), each having a base station (20, 22, 24, 26) for providing wireless communications to NIUs within each cell {fig.1; col. 4, lines 55–59} and for providing a point to point inter-cell radio link with other base stations within the network (via 36, 48, 50, 38).

Response to Arguments

9. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuongchau Ba Nguyen whose

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telephone number is 703-305-0093. The examiner can normally be reached on Monday-Friday from 10:00 a.m. to 2:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 703-308-6602. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.



Phuongchau Ba Nguyen
Examiner
Art Unit 2665

June 28, 2004

DUCHO
PRIMARY EXAMINER

